

B. H. Swales
Yosemite.

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W. R. F.

COOPER ORNITHOLOGICAL CLUB

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MEETINGS OF THE COOPER ORNITHOLOGICAL CLUB

SOUTHERN DIVISION: At the Museum of History, Science, and Art, Exposition Park, Los Angeles. Time of meeting, 8 P. M., the last Thursday of every month; or on the Tuesday evening preceding, when the last Thursday falls on a holiday. Take south-bound car from town; on Spring Street, the car marked "University", on Hill Street the car marked "Vermont and Georgia". Get off at Vermont Avenue and Thirty-ninth Street. Walk two blocks east to Exposition Park. The Museum is the building with the large dome.

NORTHERN DIVISION: At the Museum of Vertebrate Zoology, University of California, Berkeley. Time of meeting, 8 P. M., the third Thursday of every month. Take any train or car to University Campus. The Museum of Vertebrate Zoology is a large corrugated iron building situated on the south side of the campus immediately north of the football bleachers.





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THE OSPREYS OF THE YELLOWSTONE

By M. P. SKINNER

WITH ONE PHOTO

THE OLD-TIME beaver trappers, gold miners, and explorers in the West were too oblivious of bird-life to leave us any records. But since the earliest of the scientific parties to visit the Yellowstone record the abundance of ospreys*, we can assume that this region has always been a favorite habitat for them. At the present time these birds attract a great deal of attention from tourists, who know them as "eagles". It is not strange that they should, for the birds are living in the Grand Canyon of the Yellowstone where the nests are plain to be seen and the ways of the birds are open to all who will watch them. I know of no easier bird-study than this. One has but to find a shady spot with a stone or a log for a seat; the birds are immediately below one; and there are no discomforts of wet feet, blazing heat, or insect pests. If one wishes, a book can be taken along; and always there is the wonderful scenery of the Yellowstone Canyon, should both bird-study and book lose their interest. It comes as near being "ornithology de luxe" as can be.

Most of Yellowstone Park is an elevated lava plateau from which the streams descend by waterfalls. Hence under natural conditions there were formerly no fish above these falls with the exception of Yellowstone River and Yellowstone Lake. It was along this river and its tributaries, the lake and the lower parts of other streams, that the ospreys were abundant. In 1889 the planting of trout in the formerly barren streams was begun. This stocking was successful; all the principal streams now have fish, and the ospreys are just beginning to establish their homes near them. The process is a slow one, for the conservatism the osprey shows in nesting year after year on the same site would prevent his rushing into new hunting grounds. In the two-mile sec-

*The American Osprey (*Pandion haliaetus carolinensis*).

tion of the canyon below the Lower Falls there are twenty-five pairs of ospreys, thirty nests are along the west shore of Yellowstone Lake, one in Pelican Valley, one at Mud Volcano near Hayden Valley, two on the upper Lamar River,



Fig. 43. OSPREY AND ITS NEST, ON "EAGLE NEST ROCK", IN THE GARDINER RIVER CANYON, YELLOWSTONE PARK.

Copyrighted photo by Haynes, St. Paul.

one in Gardiner Canyon, and one in the Upper Geyser Basin. I believe there is double this number of occupied nests in the whole Park, or a total of one hun-

dred and twenty pairs of ospreys regularly breeding there. There are also two old, or abandoned, nests for each occupied one. Most ornithologists would surely rank this bird as abundant here, and I believe this abundance is due to the large quantities of easily obtainable fish as much as to the absolute protection afforded. As trout are the only large fish to be had, sportsmen-tourists are sometimes antagonistic to these rivals of the air. But there are certainly fish enough for all; and when it is considered that the ospreys catch mostly the wormy fish whose malady makes them an easy prey by bringing them near the surface, and less alert to the plunging danger from above, we see that they are really improving the stock by removing the diseased members.

Ospreys arrive at the low-altitude Gardiner River Canyon about April 17 (my earliest date is April 15, 1915), but it is apt to be two weeks later before they reach the Yellowstone Canyon and Lake; even so, early May is well on the snowy side of the year. The birds are already paired off (in fact they are believed to mate for life), and immediately start their hunt for a nest site. Although they may have nested at a certain place for years, they go through the form of site-hunting each year and then finally return to the old nest. Undoubtedly the normal nesting site of an osprey is the tip of a tall spruce, pine, or fir on or near the water's edge. I do not think there is any preference shown for either living or dead trees, but it is likely that the nesting often kills the tree. In certain canyons, notably the Gardiner, Gibbon, and Yellowstone canyons, the ospreys have chosen to build their homes on the tips of sheer, out-jutting pinnacles of rock whose tips are completely covered by the nest. That these prove reasonably safe can be deduced from their continued use over a long term of years; yet I have observed that the mortality among the young is high, only about one-half reaching maturity.

Repairing the nest (I cannot corroborate from my own observation the statement that this bird repairs its nest in the fall) is soon finished. It is then four feet or more in diameter and made of a great mass of sticks some of which may be as large as a man's wrist, usually secured by the bird dropping heavily on the dead limb of a tree and at the same time giving it a peculiar wrench with his strong feet. Coarse grasses, pine needles, pieces of bark and other rubbish are placed on top. Most of the nests are close to the water, but some are a mile or more from it. As a rule there is quite a delay from the finishing of the nest to the laying of the eggs. I have found sets of eggs as early as May 20, and have known of other sets not completed until June 25. Even the earlier of these dates is very late; but is evidently due to the late date (often mid-June) that ice remains in the lake; and the stream-haunting birds are delayed by the June rise of the streams. Fish is to be had in these streams before the rise, but evidently the birds do not consider it safe to risk their young against the usual conditions of May and June; perhaps also the late snows of June might have their effect on the exposed birds. About Yellowstone Lake, with an altitude of 7800 feet, nesting is fully as early as in Gardiner Canyon at 5500 feet.

Two or three eggs constitute a set and they are brooded for twenty-eight days by the female, who remains continuously on the nest except that during a warm, sunny day she may venture to leave for a short time. I have often wondered why the nests were so large. Can one of the reasons be to afford the young room to find a cool spot? While the temperature in the shade reaches a maximum of only 80 degrees, on the sun-baked floor of the exposed nests it is

115 degrees, although a good breeze may bring the general temperature down to a hundred degrees. How comfortable for the young birds to move out to the edge of the nest! Here they usually sit in a row facing in and towards the wind if there is any. Before they are large enough to do this, they must of necessity remain in the shade of the half-raised wings of the mother, who remains on the nest to shelter them for at least two weeks, and at intervals for a week longer, after the incubating period. The whole osprey family might serve as a model of deportment. While the mother is busy brooding the eggs, her mate is away fishing for her; when he brings in her fish, as he does at quite regular intervals, he tears it up and gives it to her in small pieces. Later he redoubles his activities and brings in trout for both the nestlings and their mother.

One morning I came in sight of a nest containing three young birds. The female was on the nest with her back to the sun and her wings drooping slightly. Just in front of her breast in the shade were her babies, each clad in light brown down that could barely be made out against the floor of the nest. The father was on a dead pine a quarter of a mile away, with a fish from which he had removed the head and entrails. Soon two or three shrill whistles were sounded by the female, which proved to be the food call; for the male dropped down to the nest immediately thereafter. The mother stood up and the four-day-old youngsters arranged themselves in an orderly row; no attempt whatever was made to get to the fish although it was only three inches from their bills. The male stood on the fish (a trout of about one pound weight) and tore it up, giving it bit by bit to the mother, and occasionally a tiny bit to a nestling. It was the mother, however, that did most of the feeding. She received the fish in pieces not larger than half an inch in diameter, reduced them to still smaller size, and fed each bird in turn until all were satisfied. Then the mother ate the remainder, and I believe the bones and skin were also consumed. The male flew back to his stub to preen while the mother settled down once more to shelter her young. The whole scene from the first food call at eight o'clock lasted only half an hour. At a later date I observed that the fish was occasionally turned over entire to the female.

The careful training that young ospreys receive is further shown when a nest is approached. On hearing the whistled alarm given by a parent, usually the mother, the young birds throw themselves flat on the floor of the nest often with necks and wings outstretched. When the observer reaches the nest no movement is to be seen; the nestlings permit one to take them up, turn them over, or place them in any position without offering any sign of life beyond the half-open, staring eyes. After the nest is left, the young ospreys maintain their position until the parents have given the reassuring signal. I have seen half-grown ospreys hold this inert posture for an hour and twenty minutes while the parents were flying about or even standing on the edge of the nest, but no motion whatever was made until the proper signal was sounded. Young ospreys are not fast growers, but at ten days of age begin to show black on the primaries; and ten days later, more distinctive markings commence to appear. From thirty-five to forty-five days after hatching they leave the nests fully feathered and strong of wing.

Only once in my experience have I seen ospreys fight among themselves and that was due to disputed ownership of a trout. In the Yellowstone, at least, the ospreys live in perfect harmony with smaller birds. An impressive instance was to see a bird plunge into a creek within a few feet of a two-week

old brood of Mallard without disturbing the ducklings in the least. The only belligerent moves I have ever noticed was the driving away of ravens and gulls from the vicinity of the nests.

The osprey uses the rivers of the Park rather than the lakes for hunting grounds. He hunts either up or down stream, flying along with slow, heavy flaps that give him an undulating flight. When he sights his prey he stops and hovers for a few moments; perhaps the fish is too large or in an unfavorable position. If so, flight is resumed. Suddenly he stops, and after an instant's hesitation, closes his wings and shoots downward; as he nears the surface his long legs reach down, and at the moment he enters the water, his talons sink deep into the back of the fish. Seldom does he fail to make his catch. After a shake or two, he is off to his nest or to a favorite perch to devour his dinner. He is light in weight, rarely more than three pounds, and it is marvellous how many miles he can carry a fish of one-third his own weight. Fish are carried head foremost but I note no preference as to whether the fish is right side up or not. I imagine if the original striking hold is retained, the fish is carried back up; but if for any reason the grasp is shifted then the side or even the belly becomes uppermost. It is often the case that if a fish is dropped, no apparent effort is made to recover it, whether it falls into the water or on land.

The departure of the ospreys takes place about the middle of September (September 25, 1914, being the latest date in my records). This early departure is noticeable, for other fish-eating birds remain later. Gulls do not leave until November, and kingfishers and mergansers remain all winter to fish in the streams kept open by the warm geyser water. Yet the osprey seems to be as well protected against the cold as they.

Summerville, South Carolina, May 10, 1917.

HABITS OF THE MAGPIE IN SOUTHEASTERN WASHINGTON

By LEE R. DICE

(Contribution from the Zoölogical Laboratory, Kansas State Agricultural College, No. 13)

WITH TWO PHOTOS

MAGPIES (*Pica pica hudsonia*) are abundant in the timber along the streams in Walla Walla County, Washington. They also wander considerable distances out into the bare bunchgrass hills, though they are rare in the open and retreat to thick brush or timber, when alarmed. Except during the breeding season, magpies travel in flocks. These flocks are usually small, though in winter any number of individuals up to about fifty may be found together.

Nesting occurs very early in the year, and near Prescott the young are often able to fly before the first of May. In the appended table are given the records of nesting obtained in the years 1905, 1906, 1908, and 1913. All of the nests reported were found in the timber along the Touchet River about two miles east of Prescott. Other duties of the author interfered with regular observations, so the records are not at all complete.

The average number of eggs in a set, calculated from thirteen apparently

full sets, is nearly seven (6.85). The average number of young from eight nests is decidedly less, being not quite five (4.75). Probably the smaller number of young than eggs per nest is due to the failure to hatch of one or more of the eggs in each set.

The earliest record of eggs is the set of nine eggs found on March 26, 1905, while the latest that eggs were found still unhatched was April 22, 1906. Naked young were found on April 8, 1906, while in another nest feathered young were still in the nest on May 17 of the same year. By late summer the young have become fully grown and cannot be distinguished in appearance from the older birds.

The nests are bulky structures composed chiefly of a bushel or more of coarse sticks. They are placed from four to thirty feet high in the branches of a tree. Thorny growths are preferred, although orchard trees, locusts, cottonwoods, or practically any tree may be utilized. The nest is completely arched over the top with the sticks, only one opening, or at most, two, just large enough to admit the bird into the large central space, being left on the sides. Many of the sticks used in building the nest are thorny, so the structure makes an excellent defense for the eggs and young, as well as for the bird on the nest. The nest cup is made of somewhat smaller twigs than the rest of the nest and is thickly plastered with mud. On the inside it is thickly lined with dried grasses. In one case the lining was made of dry pine needles, but pines are absent from Walla Walla County, except the few that have been planted for shade.



Fig. 44. NEST OF MAGPIE IN OSAGE TREE;
PRESCOTT, WASHINGTON.

In spite of the protection offered by the structure of their nest, at least one brood of young magpies was attacked by some enemy. This nest, on April 22, 1906, held five naked young birds and one egg. The egg later hatched, making six nestlings. However, on May 2, there were only four young birds in the nest, all still much too young to fly, and one of these had a badly lacerated wing.

The parent magpies are vociferous in the defense of their nests. Both male and female will closely approach an intruder, scolding with all their might, though at other times of the year they are notably shy and difficult to approach within gun-shot range. In one case at least, the same nest was used more than once. In this nest, in 1906, a brood of young was reared until they were nearly grown. Then both old birds were killed and some of the young

taken for pets, the rest being killed. The history of the nest in 1907 is not known, but in 1908 it was again occupied by a pair of magpies.

Magpies are sometimes kept as pets, and, if taken when young and kept away from their own kind, readily learn to say a number of words and phrases. They are more apt to be friendly with, and talk to, strangers than to members of the family where they are kept. Especially the person who does the feeding is likely to be discriminated against in favor of some one else less familiar to the bird. A magpie will sometimes be very talkative to a person dressed in "Sunday" clothes, who would not be noticed in ordinary ranch attire.

Magpies have a bad reputation as thieves. In the Touchet Valley they are destructive to hens' eggs and small chickens. They break the eggs with their strong bills and usually devour them on the spot. They also destroy the



Fig. 45. YOUNG MAGPIES, NEARLY LARGE ENOUGH TO DESERT THE NEST; PRESCOTT, WASHINGTON.

eggs and young of native wild birds. On April 27, 1906, one ate two eggs from the nest of a Long-eared Owl, from which the parent birds had been driven away by shooting. Ripe cherries are a favorite food when they can be obtained; these are eaten at the tree, or may be carried away in the bill to be eaten in the seclusion of the more dense brush. The birds feed also on the carcasses of dead animals, or on any offal that may be available.

On account of their depredations, magpies are constantly hunted. They are very wary, however, and this, combined with their adaptability in the matter of food, their protected nests, and good-sized families, enables them to thrive. In spite of an occasional one that is shot, or of a few nestsful of young that are destroyed with malignant intention, they are not decreasing in abundance in the region.

RECORDS OF MAGPIE NESTS, PRISCOTT, WASHINGTON

Nest No.	Year	Eggs, first found	Eggs, full set		In same nest		Nestlings	Fledglings
			Eggs	Young	Eggs	Young		
1	1905	1 (Mar. 31)	0 (Apr. 12)	.....	.....	.....	.....	.....
2	1905	.....	9 (Mar. 26)	.....	.....	.....	2 (Apr. 18)	.....
3	1905	6 (Mar. 26)	8 (Apr. 8)	.....	.....	.....	.....	.....
4	1906	5 (Apr. 3)	6 (Apr. 6)	1	5 (Apr. 22)	4 (May 2)	.....	.....
5	1906	.....	5 (Apr. 4)	.....	.....	5 (Apr. 22)	.....	.....
6	1906	.....	7 (Apr. 7)	1	6 (Apr. 22)	.....	.....	.....
7	1906	.....	7 (Apr. 8)	1	6 (Apr. 22)	.....	.....	.....
8	1906	.....	.....	1	7 (Apr. 8)	7 (Apr. 11)	7 (Apr. 22)	.....
9	1906	2 (Apr. 8)	4 (Apr. 11)	.....	.....	.....	3 (May 17)	.....
10	1906	.....	6 (Apr. 8)	.....	.....	4 (Apr. 22)	.....	.....
11	1906	.....	9 (Apr. 22)	.....	.....	.....	.....	.....
12	1908	.....	6 (Apr. 5)	.....	.....	.....	.....	.....
13	1908	.....	7 (Apr. 12)	.....	.....	.....	.....	.....
14	1913	.....	7 (Apr. 20)	.....	.....	.....	.....	.....

Manhattan, Kansas, February 19, 1917.

THE WINTER MIGRATION OF 1916-17 IN THE NORTHWEST

By J. HOOPER BOWLES

WITH TWO PHOTOS

THE WINTER of 1916-17 will long be remembered by the ornithologists of the northwest at least, as breaking all previous records for the migration of numerous varieties of northern land birds. I wish to be particularly explicit as to the term land birds as, for some reason, we have had practically no migration of northern sea birds. This is all in very marked contrast to the previous winter of 1915-16, when we experienced the largest migration of northern sea birds that I have ever seen, but practically no migration at all of northern land birds. The winter of 1915-16 was the coldest and most severe that I have known during a residence of twenty years in the northwest, ice and snow remaining on the ground for weeks at a time. The present winter of 1916-17, on the contrary, has been rather a mild one, there having been only a little ice and but a few light falls of snow that have lasted only three or four days at the most.

Returning to the subject in hand, the first migrants of importance to be noted were the Horned Owls, which began putting in their appearance early in the fall of 1916. It is difficult to tell just when this began, because of the possibility of the resident birds being taken. However, as the season advanced specimens were taken in almost all possible gradations of plumage, although I saw none that I should consider perfectly typical of true *Bubo virginianus subarcticus*. Very close approaches to this form were taken, and from these gradations led into extremely dark examples of *B. v. saturatus*, in fact very much darker than any that I have ever seen before. As I have no means of positively identifying the specimens it is impossible to say just what, or how many, forms may be represented in the dozens of birds that I have examined, but I expect to have this all cleared up at a later date.

At first these migrants were regarded only as what might be usually expected here, but soon they became so numerous as to be a veritable pest. Poultry farms of all kinds were raided without mercy, one example that I shall give in some detail being the gamebird farm belonging to Dr. G. D. Shaver, of Tacoma. The captive wild ducks seemed to have the most attraction, and of fifty-three that the doctor had at the beginning of last fall, only twenty-six are left at the present writing—and the owls are hooting there now. The doctor shot a number of them, but killed more by poisoning the carcasses left uneaten. These usually had the heads eaten off, after which the owls would drag them in under some log or roll of wire netting where they were well hidden. It is interesting to note that sometimes the owls would not return to their kill for a period of time ranging from one to five or six days. In two instances two owls were poisoned in one night by eating the same bird, and one owl carried a full-grown Mallard hen twenty feet up into a fir tree where both birds were found dead about a week later, the owl firmly clutching the poisoned body of its prey.

I examined a great many stomachs of these owls, the contents of which showed about an equal number of mammals and large birds. Nothing smaller than a Green-winged Teal was found. A number of stomachs contained the remains of hens, curiously enough all of them being Barred Plymouth Rock. This is decidedly strange, because such breeds as the White Leghorn outnum-

ber them in local poultry yards nearly twenty to one. The mammals eaten were confined almost entirely to rabbits and small skunks, or civets (*Spilogale*), it was somewhat difficult to tell which as both have the same odor. It is remarkable what one of these owls can swallow, as in one stomach I found the entire hind leg of a full grown civet, which was torn off where it joined the body. Mr. D. E. Brown, of Seattle, reports finding the entire leg of a full grown hen in one owl.

Great as was the flight of these owls in the vicinity of Tacoma, the main abundance seems to have centered in Vancouver Island, as is shown by a letter to me from Mr. Walter F. Burton, of Victoria, B. C. This I quote in part as follows: "We have a plague of Horned Owls here, which has cleaned out all our pheasants. Hundreds have been shot, but the damage is done. I was out after them yesterday and in a short walk counted fourteen pairs of pheasant wings. I have killed a great many of the owls. Their chief food here is pheasants, grouse, Short-eared Owls and Meadowlarks. Now that they have finished the gamebirds they are eating salt-water ducks; the last one I shot had a



Fig. 46. POISONED DUSKY HORNED OWL CLUTCHING HUTCHINS GOOSE THAT IT HAD KILLED; TACOMA, WASHINGTON.

Golden-eye. Out of all the owls shot here I have not heard of a rat or mouse being found in the stomachs, and many have been searched." This letter was written under date of January 1, 1917, and from as excellent and conservative an observer as Mr. Burton, must be accepted as of great value.

The largest bird that I have known the Horned Owls to kill is the Hutchins Goose shown in the illustration (fig. 46), which also came from the game farm of Dr. Shaver. The killing must have taken place in the water, as the body of the goose was in the lake with the head and neck on a floating log. The body was poisoned and the owl found beside it next morning, the claws of one foot securely grasping the tail of the goose as may be seen in the picture. It is of interest to see that the method of killing so large a bird was by ripping up the neck, as the head and body were uninjured. This is precisely the same method used by the Kennicott Screech Owl in killing a full grown Ring-necked Pheasant. In both species of owl the victim is several times as heavy as the murderer.

The Horned Owl Invasion, as it might be called, extended at least as far south as Portland, Oregon, where pheasant farms in that vicinity have suffered severely from their depredations. The main line of flight seems to have been on the Pacific coast side of the Cascade Mountains, as on the east side reports do not indicate any very great increase over the usual numbers. Among the many interesting features of the migration of these owls is the fact that at least seventy-five percent of those taken have been females. This was in the vicinity of Tacoma, but it would be desirable to learn from other observers the main route taken by the males, if many of that sex joined in the general migration. Another interesting point is that up to the time of this writing, March 1, none of the birds examined by me showed the least indications of breeding. To say the least this is unusual in Horned Owls at this season of the year.

[*Later.*—The most recent horned owl examined was a female taken April 2, 1917, which showed not the least signs of breeding. This bird was examined by Mr. Edwards, who reported it to me, and mounted it. Upon comparison it shows a strong tendency towards *algistus*, although I should not consider it by any means typical, and is undoubtedly one of the horde that has swept down from the far north.]

Another interesting visiting species, that commenced arriving at about the same time as the above mentioned birds, is the Snowy Owl (*Nyctea nyctea*). The first individual recorded in the vicinity was brought in to Mr. Fred Edwards, the Tacoma furrier and taxidermist, on November 10, 1916. They became very abundant after that date, Mr. Edwards having about thirty of them brought in for mounting. The last record was taken January 25, 1917. Their food supply was about evenly divided between ducks and mammals, the latter represented by mice and rats. I doubt very much if any of the ducks eaten were brought down by the owls, all evidence seeming to show that wounded birds only were taken. In at least one instance an owl seized a duck as it reached the ground after being shot, facing the hunter with great courage as he came to secure his game. It seems probable that this migration started from farther towards the interior than that of the Horned Owls; for Mr. Burton, in Victoria, reports Snowy Owls as present, but not in great numbers. In Washington they were very abundant at Bellingham in the northwestern part of the state, as reported by Mr. J. M. Edson, of that city. At Kiona, on the east side of the Cascade Mountains, Mr. F. R. Decker reports them as common.

In a recent letter from Mr. Geo. G. Cantwell, of Puyallup, Washington, dated March 31, 1917, he writes that he has just returned from Dungenes, Washington, where three Snowy Owls were still lingering in the vicinity. Such a late date is unprecedented for these owls in Washington, in my experience, and it will be most interesting if further data on the subject can be obtained.

Another handsome migrant, which came in numbers for the first time in my experience, was the Goshawk. Although I have had none of the birds identified, such a very wide variation is to be found in both adult and immature specimens that there is hardly room for doubt that both *Astur atricapillus* and *A. a. striatulus* are represented. Goshawks seemed about equally numerous on both sides of the Cascades. Barnyard fowls seem to have made up their main food supply, the game farm of Dr. Shayer having contributed its share as usual. He killed one by poisoning a duck, and shot another while it was eating one of his hens. Mr. Edwards reports finding the remains of a rab-

bit in the stomach of one specimen, the only mammal recorded. One bird shot by Mr. Decker had been eating a Bob-white Quail.

Of the smaller birds the Bohemian Waxwing (*Bombycilla garrula*) has been the most numerous, these beautiful birds coming in flocks of as many as five thousand. Although not unusual as a migrant east of the Cascades, this is only the third record that I have for them on Puget Sound. The illustration (fig. 47) shows a very small portion of an immense flock that I saw at Tacoma. Berries of the mountain ash, madroña, hawthorne, and other trees and shrubs constituted their chief food; but one warm day, February 3, 1917, a number



Fig. 47. BOHEMIAN WAXWINGS IN TACOMA, WASHINGTON, JANUARY 14, 1917.

were seen hovering and swooping about high above the tree tops. Upon collecting one of them the stomach was found to be packed with winged insects, which it had secured with all the ease and grace of a flycatcher. The first to be definitely recorded this season from Tacoma were taken by Mr. E. A. Kitchen and Mr. Stanton Warburton, Jr., of this city, on January 1, 1917. The birds were undoubtedly seen by Mr. Kitchen a week or ten days earlier, but he would not record them until he had one in hand.

Another rare migrant, which also makes the third time I have recorded it

here, is the Redpoll (*Acanthis linaria linaria*), my first specimen for the season being taken on February 3, 1917. After that date Redpolls were seen several times, one flock containing at least a thousand individuals. I examined them carefully with a glass at short range, but could see none that might have belonged to any other varieties of Redpoll.

Tacoma, Washington, April 5, 1917.

OBSERVATIONS ON SOME FRESNO COUNTY BIRDS

By H. S. SWARTH

(Contribution from the Museum of Vertebrate Zoology of the University of California)

DURING the fall of 1916 the writer, together with Mr. Joseph Dixon and Mr. Halsted G. White, in carrying on field work for the Museum of Vertebrate Zoology in the Kings River section of the Sierra Nevada, had occasion to do some bird collecting at a point lying just within the boundary of the territory covered by John G. Tyler in his papers on "Birds of the Fresno Region, California" (Pacific Coast Avifauna no. 9, 1913, and *CONDOR*, xviii, 1916, p. 167 and p. 194). In the course of our observations several species were encountered not included in those lists, as well as others whose presence is based upon such scanty data that it seems desirable to place on record statements as to the manner in which we found them.

We stayed at the little hamlet of Minkler, in the southern part of Fresno County, some ten miles east of the town of Sanger. At this point the valley for miles around is largely devoted to vineyards, practically all arable land being under cultivation, and in what would seem to be an unfavorable condition for birds; but the bottomlands of the Kings River, in this section split up into innumerable narrow and tortuous channels, is a wilderness of tangled willows and underbrush that forms a haven of refuge for many species. Many birds, too, did seem to find attraction in the vineyards. About a mile to the eastward the first of the Sierran foothills rises abruptly, barren of trees or underbrush, but well covered with grasses and other forage plants, and evidently used at times for cattle grazing. Scattered over the hills are numerous rock piles of varying extent.

Birds were numerous, and the variety of surroundings and cover found within a relatively small area was productive of many rather striking contrasts among species observed in close proximity. We remained at Minkler ten days, October 4 to 13, and during this time seventy-seven species of birds were listed by our party. Of these, the following sixteen seem worthy of special mention regarding their occurrence at this point.

Buteo lineatus elegans. Red-bellied Hawk. Included in Tyler's supplementary list as occurring sparingly in the Kings River bottoms near Sanger. This is the section we were in, and one or more of these hawks were seen daily, while they could be heard constantly giving their characteristic chattering call as they circled overhead.

Phalaenoptilus nuttallii californicus. Dusky Poor-will. One specimen recorded by Tyler. I saw one in a vineyard at Minkler, October 5, and others were seen or heard at points farther back in the hills. It is undoubtedly of fairly common occurrence in this section.

Spinus pinus pinus. Pine Siskin. Abundant, frequenting weed patches and clumps of sunflowers. In large flocks, associated with the several species of goldfinches and the Linnet.

Pooecetes gramineus affinis. Oregon Vesper Sparrow. In the open pastures and on the hills vesper sparrows were present in numbers. But one specimen was collected, October 7, and this proved to be *affinis*.

Zonotrichia coronata. Golden-crowned Sparrow. Listed by Tyler as a "rare winter visitant". We found it present at Minkler in great numbers, often associated with the Intermediate Sparrows, but on the whole showing a preference for denser cover. These sparrows were rather a nuisance, intruding themselves constantly into our small mammal traps and thus forestalling the capture of more desirable specimens.

Aimophila ruficeps ruficeps. Rufous-crowned Sparrow. On the foothill slope some half a mile east of Minkler this species was found in fair abundance. As many as ten or twelve might be observed in the course of half an hour. The hills they frequented are devoid of brush or trees of any sort, and the sparrows resorted for shelter to the numerous rock piles and outcroppings. Here, in company with a large Rock Wren population, they seemed to find congenial surroundings despite the lack of vegetation of a size to afford shelter.

Melospiza lincolini lincolini. Lincoln Sparrow. Of four specimens of this species collected, one proved to be *M. l. lincolini*, the other three, *M. l. gracilis*. The species, of whichever form, was abundant in the willows.

Passerella iliaca meruloides. Yakutat Fox Sparrow. A fox sparrow taken on October 10, the only one seen, is of this subspecies.

Oreospiza chlorura. Green-tailed Towhee. A single specimen is recorded by Tyler from Mendota. We secured one, an immature female, in the willows at Minkler, October 6. This species is undoubtedly but a mere straggler to the western base of the Sierras.

Vermivora celata celata. Orange-crowned Warbler. A typical example of this subspecies was taken at Minkler, October 12.

Vermivora celata lutescens. Lutescent Warbler. It seems curious that this species should be omitted from Tyler's list, for it must be of regular occurrence through the region as a migrant. We observed it at Minkler daily, though in small numbers, in the willow bottoms and also in weed patches and vineyards.

Catherpes mexicanus punctulatus. Dotted Canyon Wren. On the rock-strewn hillside east of Minkler this species was found in small numbers. Rock Wrens fairly swarmed over the hills, and were remarkably tame and confiding, but the Canyon Wrens retreated into the deeper crevices of the rocks at the first sign of danger, and were seen but with difficulty at any time. The species probably would have been overlooked had it not been for the resonant call note, audible at a surprisingly long distance.

Troglodytes aedon parkmani. Western House Wren. Five or six seen, usually in the willow bottoms.

Telmatodytes palustris plesius. Western Marsh Wren. Several marsh wrens were seen. The single specimen collected, taken October 12, proved to be of the subspecies *plesius*.

Hylocichla guttata guttata. Alaska Hermit Thrush. But a single hermit thrush was seen at this point, a specimen of the subspecies *guttata*, taken in the willows, October 12.

Ixoreus naevius meruloides. Northern Varied Thrush. The unmistakable call note of a Varied Thrush was heard in the river bottom, October 11. This may be taken as the date of arrival, for though none had been seen or heard previously, they were encountered several times during the remainder of our stay.

Berkeley, California, February 20, 1917.

SOME BIRDS OF CENTRAL OREGON

By ALEX WALKER

WITH MAP AND ONE PHOTO

THE BASIS of this paper consists of notes and specimens collected during three trips to this region. In 1913, accompanied by my father and a friend, Max Short, I made a five weeks camping trip, travelling with team and wagon. We left The Dalles on May 15, and drove up the Columbia River to the mouth of the Deschutes, then south through Sherman County to Madras, from Madras to Silver Lake by way of Redmond and Bend, through the Deschutes National Forest reserve of Crook* and north-eastern Klamath counties. The return was made by way of the Paulina Mountains and Prineville to Madras, from which place a side trip was made to Sisters before driving to The Dalles through Warm Springs Indian Reservation, Mutton Mountains and Tygh Valley.

During 1914 I visited the mouth of the Deschutes River, from July 24 to August 8 inclusive, for the purpose of collecting birds and mammals for the Oregon Fish and Game Commission. The State Biological Survey has been conducted under the direction of William L. Finley, State Biologist, who has been working under the supervision of the Bureau of Biological Survey, United States Department of Agriculture. For a few days Stanley G. Jewett, then with the State Fish and Game Commission, M. E. Peck of Willamette University, and Alfred Shelton of the State University, were with me at the mouth of the Deschutes.

On the third trip I was in the field continually from April 1 to June 1 for the Fish and Game Commission in company with Mr. Jewett who was then collecting for the U. S. Biological Survey. Part of the time we were accompanied by Mr. F. E. Garlough. On this trip we collected at the mouth of Willow Creek in Gilliam County; at Millers near the mouth of the Deschutes in Sherman and Wasco counties; at Maupin on the Deschutes in Wasco County; and on the Warm Springs Indian Reservation far enough into the mountains to se-

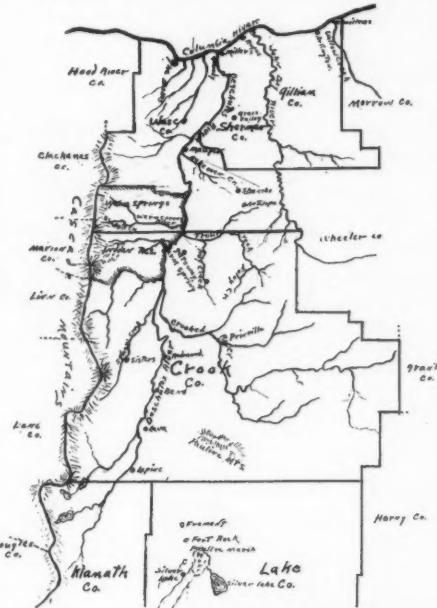


Fig. 48. SKETCH-MAP OF CENTRAL OREGON.

*Since part of these notes were made, Crook County has been divided into two counties, the northern portion being called Jefferson County.

ture typical species of the eastern Cascade slopes. Good collections were made at Gateway and Haycreek, and some work was done on Foley Creek in a spur of the Blue Mountains east of Haycreek.

Central Oregon lies between the Cascade and Blue mountains. The country is a high plateau and the rivers flow through deep canyons. The Deschutes is the principal river flowing north. The John Day River and Willow Creek flow into the Columbia in Gilliam County. Warm Spring River and the Metolius are the largest tributaries flowing into the Deschutes from the west, while

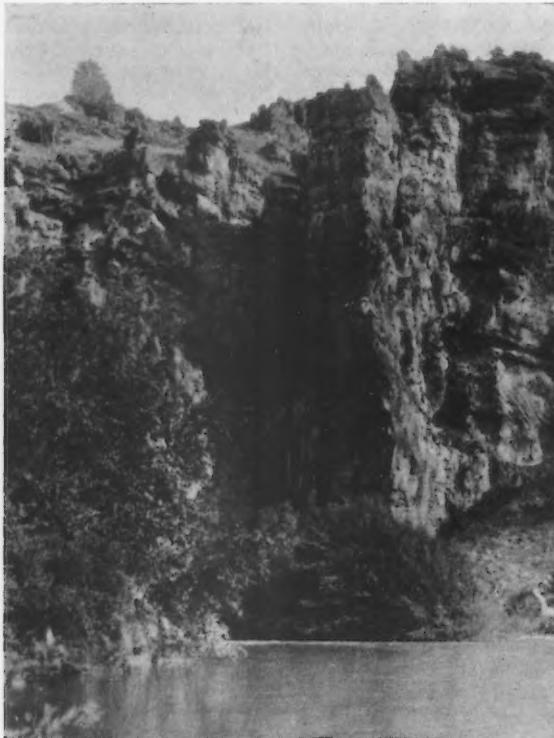


Fig. 49. CLIFFS ON WARM SPRING RIVER, NORTH-CENTRAL OREGON; SUITABLE NESTING SITES HERE AFFORDED FOR SAY PHOEBE, RAVEN, AND WESTERN RED-TAILED HAWK.

Crooked River is the main tributary from the east. The former rises high in the Cascade Mountains, while the latter comes from the high Blue Mountains.

A considerable part of this high dry area is in the Upper Sonoran life zone. In northern Sherman and Gilliam counties there are still large areas of bunchgrass; but as this land is rapidly being broken up and the grazing land turned into wheat ranches, some of the Upper Sonoran species will diminish in numbers to be replaced by those Transition species which increase with the cultivation of the country. The most conspicuous and abundant plant of the Upper

Sonoran zone is the sage-brush (*Artemesia tridentata*). This shrub is found abundantly to the very edge of the timber and is only replaced by other vegetation along streams and in some of the valleys. Other typical plants of this zone are the greasewood (*Sarcobates vermiculatus*), hackberry (*Celtis occidentalis*), currant (*Ribes aureum*), and phlox (*Phlox douglasii*).

The lower Cascade and Blue Mountain slopes lie within the Transition zone, as do the Deschutes and other Forest Reserves of southern Crook and northern Klamath counties. The Paulina Mountains and Mutton Mountains are small, isolated ranges more or less timbered with pine and juniper. The principal forest trees are the western yellow pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga taxifolia*), and grand fir (*Abies grandis*). In the more open country the western juniper (*Juniperus occidentalis*) grows extensively. Willow (*Salix amygdaloides*), alder (*Alnus rhombifolia*), and cottonwood (*Populus trichocarpa*) are found along streams. Oak (*Quercus garryana*) is common on the hills near The Dalles. Other plants of this zone are cedar (*Libocedrus decurrens*), chokecherry (*Prunus demissa*), blue elder (*Sambucus glauca*), western birch (*Betula frontalis*), wild rose (*Rosa picicarpa*), snowberry (*Symporicarpus orophilus*), currant (*Ribes cereum*), and buck-brush (*Ceanothus velutinus*). The following lists are given to show some of the typical species of land birds of the two zones.

UPPER SONORAN SPECIES

Sage Hen	Brewer Blackbird
Desert Sparrow Hawk	Western Lark Sparrow
Burrowing Owl	Sage Sparrow
Western Kingbird	Brewer Sparrow
Say Phoebe	White-rumped Shrike
Gray Flycatcher	Sage Thrasher
Dusky Horned Lark	Rock Wren

TRANSITION SPECIES

Rocky Mountain Hairy Woodpecker	Slate-colored Sparrow
White-headed Woodpecker	Lutescent Warbler
Western Wood Pewee	Audubon Warbler
Clarke Nutcracker	Western Yellowthroat
San Diego Red-wing	Dipper
Bullock Oriole	Pigmy Nuthatch
Crossbill	Mountain Chickadee
Shufeldt Junco	Western Bluebird
Cassin Vireo	

Aechmophorus occidentalis. Western Grebe. Breeds rather sparingly at the Paulina Marshes where it was found among the tall tules in the deepest parts of the marsh.

Podilymbus podiceps. Pied-billed Grebe. Noted in the more shallow parts of the Paulina Marsh, where nests found early in June contained eggs in an advanced state of incubation.

Hydrochelidon nigra surinamensis. Black Tern. Tolerably common at Paulina Marsh, where it doubtless breeds, but no nests were found.

Larus occidentalis. Western Gull. Noted on the Columbia River near the mouth of the Deschutes, in April, 1915.

Larus californicus. California Gull. A specimen was taken at the mouth of the Deschutes on August 4, 1914.

Pelicanus erythrorhynchos. White Pelican. On June 1, 1913, a large flock was seen in flight a few miles east of Silver Lake.

Mergus americanus. Merganser. Noted on the Deschutes River.

Anas platyrhynchos. Mallard. On May 20, 1913, a pair of Mallards was flushed from an alfalfa field bordering an irrigation ditch near Antelope, and ten days later I found the species fairly common at the Paulina Marsh near Silver Lake. Here several

nests were examined in a large patch of dead tules, the eggs at this time being in a well advanced stage of incubation. This species also nests in the tall grass and thick beds of leaves at the foot of numerous clumps of willows growing in the shallow or higher parts of the marsh. In one of these willows a Mallard had lined a deserted crow's nest with down, and was incubating six eggs.

Querquedula cyanoptera. Cinnamon Teal. This is the most common of the ducks breeding at the Paulina Marsh. They nest almost exclusively in the large areas of bent-over tules. The nests are usually composed of dry tules lined with dark down, and placed on a platform of dead broken-over reeds, well concealed from the sides and from above. These birds evince strong parasitic tendencies, as many eggs were found in nests of the next-named species.

Marila americana. Redhead. Another common duck at the marshes. On June 1 they were paired off, and two or three nests were noted in the heavy tules; but their nesting season was evidently not at its height.

Branta canadensis canadensis. Canada Goose. A common bird in the spring along the Columbia River and on Millers Island at the mouth of the Deschutes where they are accused of doing considerable damage to young alfalfa. In the fall they are abundant on the high bench land above the Columbia River, where they frequent the grain fields and afford splendid shooting. Until recently these geese nested on Millers Island. Two partly floating nests were found June 21, 1913, in the Paulina Marsh. These were large structures composed of dead rushes, with a scant lining of broken bits of tules and down. Goslings, half grown, were also noted at this time.

Botaurus lentiginosus. Bittern. Noted only at Paulina Marsh.

Ardea herodias herodias. Great Blue Heron. In August this species is common on the gravel bars at the mouth of the Deschutes River. It was noted at Maupin on the Deschutes in April, 1915.

Nycticorax nycticorax naevius. Black-crowned Night Heron. A large colony nested in the clumps of willows in Paulina Marsh. The nesting season was well advanced by June 1, but a few nests still contained fresh eggs, while some held young birds a third grown.

Grus mexicana. Sandhill Crane. I did not meet this species at the marsh, but it breeds five miles to the south, in the vicinity of Silver Lake.

Porzana carolina. Sora. One bird was observed May 29, 1913, in a marshy place on the Deschutes River south of La Pine in southern Crook County. A specimen was taken by Mr. Jewett at the mouth of the Deschutes on April 17, 1915.

Fulica americana. Coot. A common bird in the marshes of northern Lake County.

Steganopus tricolor. Wilson Phalarope. This beautiful bird is common at the Paulina Marsh and around the irrigation ditches and hay fields in the vicinity of Silver Lake. A nest collected June 30, 1913, at the town of Silver Lake, was situated in the tall grass near the bank of an irrigation ditch. It was composed of dry grasses, and contained four heavily incubated eggs.

Recurvirostra americana. Avocet. A single example was observed June 3 at the north end of Paulina Marsh.

Gallinago delicata. Wilson Snipe. Noted in April, 1915, at the mouth of the Deschutes, and at Maupin in Wasco County.

Pelidna alpina sakhalina. Red-backed Sandpiper. One was taken at Silver Lake on June 4, 1913.

Totanus melanoleucus. Greater Yellowlegs. Noted April 17, 1915, at Millers on the south bank of the Columbia River.

Catoptrophorus semipalmatus inornatus. Western Willet. A single bird was seen at the Paulina Marsh.

Actitis macularius. Spotted Sandpiper. Noted on the bank of the Columbia at the mouth of the Deschutes, and in the vicinity of irrigation ditches at Redmond, Crook County.

Oxyechus vociferus. Killdeer. The most common and widely distributed shorebird of this region. Noted at nearly all the streams and small marshes between the Columbia River and Silver Lake except the timbered areas.

Oreortyx picta picta. Mountain Quail. An adult bird with a band of young was noted in the hills three miles west of The Dalles on June 20, 1913. A specimen was taken by Jewett on the Warm Springs Indian Reservation, in May, 1915.

Lophortyx californica californica. California Quail. Common at the ranches, in the canyons and on the slopes near the mouth of the Deschutes River, and in Bake-oven Creek canyon near Maupin.

Dendragapus obscurus fuliginosus. Sooty Grouse. This bird was noted at Maupin by Jewett, and two specimens were taken by O. J. Murie at the mouth of Davis Creek, in Crook County, on April 8, 1913.

Pediocetes phasianellus columbianus. Columbian Sharp-tailed Grouse. This species, locally called Prairie Chicken, occurs locally in Wasco, Sherman and Gilliam counties where it frequents grazing land and grain fields on the high plateaus south of the Columbia River. This was formerly a bunch-grass country, but is now cultivated to a large extent. Two nests with eggs were collected on April 19, 1915, in Sherman County near the Miller Ranch at the mouth of the Deschutes River. The nests were similar, each being a slight depression lined with grass, grain stems and feathers, and situated in small clumps of growing grain in a large field. While incubating, the females have a most gentle and unexcitable disposition.

Centrocercus urophasianus. Sage Hen. Tolerably common in suitable localities. I observed it in numbers north of Fort Rock, and it is abundant in parts of the Silver Lake country. In the latter place their worst enemies are the great bands of sheep that graze over their breeding ground and destroy many nests. On May 10, 1915, a parent bird with her band of young was seen at Haycreek by the foreman of the Haycreek Ranch. At that place Sage Hens are said to congregate in large bands during the winter.

Phasianus torquatus. Ring-necked Pheasant. A number of these birds were liberated on the Moody Ranch in northeastern Sherman County in August, 1914. They have also been introduced near Willows, Gilliam County, and at Haycreek, Crook County.

Zenaidura macroura marginella. Western Mourning Dove. Common over a large part of the open country, particularly in the vicinity of ranches and cultivated areas.

Cathartes aura septentrionalis. Turkey Vulture. While not abundant, buzzards were often seen flying above the rimrocks in many places throughout this region. At the mouth of the Deschutes this species was common and roosted in the trees on a small island in the river.

Accipiter velox. Sharp-shinned Hawk. A bird of this species that had been killed by a ranchman was seen near Madras on May 21, 1913.

Accipiter cooperi. Cooper Hawk. One was noted by Jewett in the mountains twelve miles east of Haycreek on May 21, 1915.

Buteo borealis calurus. Western Red-tail. The Red-tail is typical of the Deschutes canyon, sage brush and juniper deserts, and the Blue and Cascade mountains. Noted in nearly every locality visited. The nests are usually placed on shelves or in crevices in rocky bluffs or desert rimrocks.

Buteo swainsoni. Swainson Hawk. Noted in the vicinity of Haycreek, where with other hawks they were attracted by the hundreds of Oregon Ground Squirrels (*Citellus oregonus*) which were poisoned in the hay fields of the Haycreek Ranch.

Archibuteo lagopus sancti-johannis. Rough-legged Hawk. Seen by Jewett at Willows on April 2, 1915.

Haliaeetus leucocephalus. Bald Eagle. This bird was noted on the high plains west of Willows early in April, 1915. Jewett records the Bald Eagle as of regular occurrence along the Columbia River in eastern Oregon.

Falco mexicanus. Prairie Falcon. Jewett noted this bird at Millers, April 16, 1915.

Falco sparverius phalaena. Desert Sparrow Hawk. Well distributed throughout the greater part of central Oregon except in the deserts of southern Crook and northern Lake counties, where it occurs sparingly. Noted in the Blue Mountains east of Haycreek and in the foothills of the Cascades. Deserted woodpecker holes are the usual nesting sites of this species, but it also nests on cliffs and canyon sides. This falcon is abundant between The Dalles and the Deschutes River, a region that is almost treeless. Here it nests in holes in the banks of creeks and coulees.

Pandion haliaetus carolinensis. Osprey. Noted only on Crooked River during June, 1913.

Asio wilsonianus. Long-eared Owl. Early in April, 1915, these birds were found breeding in numbers in the willow groves at the mouth of Willow Creek in Gilliam County. The nests examined were apparently old crows' nests relined with feathers. Six weeks later in the vicinity of Haycreek this species was noted, and a nest contain-

ing heavily incubated eggs was found. At Silver Lake a Long-eared Owl was found dead on her nest in a clump of willows in Paulina Marsh.

Asio flammeus. Short-eared Owl. A pair of these birds was noted May 18, 1913, in the sage and bunch-grass country south of Grass Valley, in Sherman County.

Otus asio macfarlanei. MacFarlane Screech Owl. I examined two screech owls that had been shot in December, 1914, and mounted by Mrs. A. Osborne on the Moody Ranch at the mouth of the Deschutes. During April, 1915, Jewett collected two of these owls on Bake-oven Creek near Maupin.

Bubo virginianus pallidescens. Western Horned Owl. A pair of breeding birds was collected by Jewett at Haycreek and he also noted the species at Maupin and Prineville. In June, 1913, a bird was seen in the yellow pine timber between Sisters and the Deschutes River. Jewett collected specimens of this owl at Sisters during August, 1914.

Spectoty cunicularia hypogaea. Burrowing Owl. Noted at Willows, Grass Valley, Antelope, and Gateway in the breeding season, but at no place could it be called abundant.

Ceryle alcyon. Belted Kingfisher. Common on the Deschutes River and Willow Creek and probably occurs along other suitable streams. On the Miller Ranch at the mouth of the Deschutes, a pair nest yearly in a clay bank near the ranch buildings several hundred feet from water.

Dryobates villosus monticola. Rocky Mountain Hairy Woodpecker. On May 21, 1915; Jewett collected this species at Foley Creek in the mountains east of Haycreek. Specimens of *Dryobates* were taken on Mill Creek, but were not typical *monticola*.

Xenopicus albolarvatus. White-headed Woodpecker. This species was met with in the yellow pine timber south of Bend, at Foley Creek, and at Sisters. At the latter place it was quite common; several were noted in the town.

Sphyrapicus thyroides. Williamson Sapsucker. A specimen taken by Mr. Jewett at Foley Creek Ranch on May 21 contained a fully developed egg.

Asyndesmus lewisi. Lewis Woodpecker. Fairly common in Wasco and central Crook counties preferring the more open country with scattered pine, juniper or oak. Noted at Foley Creek, and in the canyon of Bake-oven Creek there was every indication that they nested in the numerous dead cottonwood snags. I found this species very common west of The Dalles, nesting in cavities in oaks in the vicinity of farm buildings.

Colaptes cafer collaris. Red-shafted Flicker. Tolerably common wherever there are suitable nesting sites. In some localities they nest in dirt holes in the sides of coulees.

Phalaenoptilus nuttalli nattalli. Poor-will. No specimens were taken by me on any of my trips in this region; but on Gordons Ridge in Sherman County, and at The Dalles I heard their notes well into the night. Taken by Jewett at The Dalles in 1912.

Chaetura vauxi. Vaux Swift. In June, 1913, a few of these birds were seen flying about the cliffs west of The Dalles.

Selasphorus rufus. Rufous Hummingbird. A few were noted at Sisters and on the Warm Springs Reservation. A specimen was taken at Warm Springs Agency.

Stellula calliope. Calliope Hummingbird. This species was taken at Foley Creek on May 21, 1915.

Tyrannus tyrannus. Kingbird. Two adults and four well grown young of the Eastern Kingbird were seen July 24, 1914, at the mouth of the Deschutes on the Wasco County side of the river. One adult and two of the young were collected. The following day one of the remaining birds was seen feeding on the edge of an alfalfa field on the Sherman County side.

Tyrannus verticalis. Western Kingbird. An abundant and ever present species in the more open country of north-central Oregon, particularly in the neighborhood of ranches and cultivated areas. Noted only sparingly in the unsettled country between Silver Lake and Prineville.

Myiarchus cinerascens cinerascens. Ash-throated Flycatcher. A specimen was collected on May 27, 1913, on a sage and juniper flat near Redmond. In June, 1913, I again noted the species at Sisters and at The Dalles. S. G. Jewett has recorded it from Prineville (CONDOR, XVIII, p. 21).

Sayornis sayus. Say Phoebe. A common bird in the open country except in the Silver Lake and Fort Rock regions.

Myiochanes richardsoni richardsoni. Western Wood Pewee. An example was

taken in an alder and cottonwood grove at the Warm Springs Agency on April 29, 1915. Reported by Jewett to be a common species along wooded streams throughout the region.

Empidonax traillii traillii. Traill Flycatcher. At the mouth of the Deschutes this bird was noted as fairly common in the willows along the streams. Also seen along Bake-oven Creek near Maupin.

Empidonax griseus. Gray Flycatcher. Specimens of the small gray-colored flycatcher found sparingly in the heavy sage brush country of south-central Oregon have been identified as *E. griseus*. As elsewhere recorded (CONDOR, xvi, p. 94), a specimen with nest and eggs was taken on the north side of the Paulina Mountains. On June 4, 1913, I found a nearly completed nest on a large sage-brush flat between Sisters and the Deschutes River. The nest was built in a clump of buck-brush and resembled the other nest except that the lining contained more wool. Both birds were in evidence.

Otocoris alpestris merrilli. Dusky Horned Lark. Common in the sage and bunch-grass country lying back from the Columbia River, but becomes less common to the south. In northern Lake and southern Crook counties it was rarely seen in the breeding season. Noted one between Fort Rock and Prineville. Jewett found a nest containing fresh eggs on Millers Island early in May, 1915.

Pica pica hudsonia. Magpie. A very common bird of the valleys, canyons and along brush-skirted streams of the open country.

Cyanocitta stelleri carbonacea. Coast Jay. On May 28, 1913, I collected a jay in the yellow pine belt ten miles south of Bend which was identified by Mr. H. C. Oberholser as of this species. Specimens taken along Mill Creek in the lower Cascades are no doubt referable to this form.

Cyanocitta stelleri annectens. Black-headed Jay. Several were noted in the pine timber on the mountains east of Haycreek, where a specimen was taken by Jewett in May, 1915.

Corvus corax sinuatus. Raven. A common species where there are canyons, bluffs and rimrocks, usually nesting on shelves or in crevasses in the cliffs; out on the desert I found it nesting in junipers.

Corvus brachyrhynchos hesperis. Western Crow. Common along streams bordered by cottonwoods and willows. At Silver Lake they nest commonly in the clumps of willows growing in the higher parts of Paulina Marsh. At that place they are very destructive and destroy hundreds of ducks' and night herons' eggs in the swamps.

Nucifraga columbiana. Clarke Nutcracker. Noted at Foley Creek and in the pine timber at Sisters.

Cyanoccephalus cyanocephalus. Pinyon Jay. In the latter part of May large flocks were seen in the juniper groves near Redmond and Bend. From their actions I took part of them to be young of the year. Also noted near Warm Springs Agency.

Molothrus ater. Cowbird. Two young birds were taken on the Miller Ranch at the mouth of the Deschutes on July 28, 1914; no adults were seen.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. In May, 1913, a few birds were seen on Antelope and Trout creeks in southern Wasco and northern Jefferson counties where they possibly nest. They breed abundantly in Paulina Marsh, where in early June, I examined a large number of their nests, built in the rushes growing in the shallow marsh.

Agelaius phoeniceus neutralis. San Diego Red-wing. Red-wings were noted rather sparingly along the Columbia and other streams in the open country. They were found on the Deschutes River south of La Pine in southern Crook County, and in Paulina Marsh they were very abundant, nesting in large colonies in the grassy parts of the marsh.

Sturnella neglecta. Western Meadowlark. A typical bird of the bunch-grass and open sage-brush country of north-central Oregon.

Icterus bullocki. Bullock Oriole. Along the wooded or shrubby fringed streams this species is plentiful. On Warm Springs River it is especially abundant, nesting in the small trees along the stream. In one place I found a dozen nests in an hour.

Euphagus cyanocephalus. Brewer Blackbird. Locally common near settlements and cultivated areas. This is one of the species that will undoubtedly become more plentiful with the settlement of the country.

Hesperiphona vespertina montana. Western Evening Grosbeak. Late in April, 1915, these grosbeaks were noted several times in alder trees along Bake-oven Creek

many miles from pine timber. A few were collected. A few days later they were seen at Warm Springs.

Carpodacus cassini. Cassin Purple Finch. Noted at Sisters and on Mill Creek in the Cascades northwest of Warm Springs. In the pine timber at Foley Creek they were very common.

Carpodacus mexicanus frontalis. House Finch. Common near settlements. Outnumbers the English Sparrow in many Columbia River towns.

Loxia curvirostra minor. Crossbill. Flocks were seen in the Cascade foothills west of Warm Springs and they doubtless breed extensively in the Transition zone of the eastern slopes. A nest and one egg with the parent female was taken at Sisters on July 24, 1914, by Jewett, as recorded in *The Auk*.

Spinus pinus. Pine Siskin. In April and May roving flocks are often met with in the open country far from timber.

Pooecetes gramineus confinis. Western Vesper Sparrow. This bird is typical of the bunch-grass country and is plentiful in northern Sherman and Wasco counties. I also noted it in fewer numbers in the grazing district of Crook County.

Passerculus sandwichensis alaudinus. Western Savannah Sparrow. A specimen was taken by Jewett at Haycreek on May 15, 1915.

Astragalinus tristis pallidus. Pale Goldfinch. In August these birds were abundant at the mouth of the Deschutes, but in spring and early summer they were noted only at Willows and Haycreek.

Chondestes grammacus strigatus. Western Lark Sparrow. This species was not noted in abundance in any part of the region worked. It was fairly common near the Columbia River in parts of Sherman and Wasco counties, and a few were observed at Haycreek and on the plains north of Warm Springs Agency.

Zonotrichia leucophrys gambeli. Gambel Sparrow. Common in the brush thickets of the valleys, and frequently seen also on the sage-brush plains during early spring.

Zonotrichia coronata. Golden-crowned Sparrow. On April 29, 1915, I collected a specimen from a small flock that was feeding in the underbrush of a grove along a creek near Warm Springs.

Spizella passerina arizonae. Western Chipping Sparrow. One of the most widely distributed birds of this region. Common in towns, on ranches, and in the timber belts of both the Cascades and Blue Mountain foothills. Quite plentiful on the mixed sage and juniper flats, but on the sage deserts replaced by the next species.

Spizella breweri. Brewer Sparrow. A typical bird of the Upper Sonoran life zone. Found abundantly on the open sage-brush and juniper flats. Their nests are built in sage or buck-brush and are composed largely of shredded sage bark, lined with fine dry grass and horse hair.

Junco hyemalis hyemalis. Slate-colored Junco. Taken by Jewett at the mouth of the Deschutes on April 12, 1915 (CONDOR, XVIII, p. 21).

Junco hyemalis shufeldti. Shufeldt Junco. Both *J. h. shufeldti* and *J. h. thurberi* occur in this region, but as their ranges are not yet well worked out I have included all under the former name. Juncos were noted in April and May in the thickets near the Columbia River at the mouth of the Deschutes and at Willow Creek. Plentiful in the lower Blue and Cascade mountains and in parts of the Deschutes National Forest. On May 7, a nest containing four eggs was collected on Mill Creek northwest of Warm Springs.

Amphispiza nevadensis nevadensis. Sage Sparrow. Fairly common in the sage desert from the Columbia River south.

Melospiza melodia merrilli. Merrill Song Sparrow. Common along streams in both the open country and in the timber.

Melospiza lincolni lincolni. Lincoln Sparrow. I collected a specimen at Maupin on April 22, and another at Haycreek on May 12, 1915. Both were on shrub-bordered streams.

Passerella iliaca (subsp.?). On April 30, 1915, I collected one of the northern subspecies of the Fox Sparrow in a brushy cottonwood grove at Warm Springs.

Passerella iliaca schistacea. Slate-colored Sparrow. Noted as more or less common at Warm Springs and in the pine timber at Foley Creek. Early in May they were plentiful in the timber along Mill Creek on the Warm Spring Indian Reservation, fre-

quenting the thick growth of little pine seedlings, rather than the brushy creek bottoms, their usual habitat.

Pipilo maculatus montanus. Spurred Towhee. Noted in brushy valleys and canyons at Shaniko, Willows, Maupin and Warm Springs.

Passerina amoena. Lazuli Bunting. Noted in several places along streams, but most abundant along Warm Springs River, where on June 17, 1913, nests containing young were examined in the brush along the stream.

Piranga ludoviciana. Western Tanager. Occurs over the greater part of this region except in the heavy timber and on the open sage-brush desert.

Petrochelidon lunifrons lunifrons. Cliff Swallow. Locally common, nesting on the faces of cliffs and rocky bluffs.

Hirundo erythrogaster. Barn Swallow. On June 1, 1913, I found these swallows common in the vicinity of Silver Lake. They were evidently nesting under bridges and culverts.

Tachycineta thalassina lepida. Northern Violet-green Swallow. During the migration period this species was seen at Maupin. In the breeding season it was observed plentifully about the cliffs along Warm Springs River and along rock bluffs west of The Dalles.

Riparia riparia. Bank Swallow. Noted along some of the streams in the open country and doubtless nests in the banks of coulees and along creeks.

Lanius ludovicianus excubitorides. White-rumped Shrike. Common on the sage-brush and juniper flats from the Columbia River south to northern Lake County. They build their nests in the brush or trees, a typical nest being composed of grass, sage, and feathers, with a lining of sage bark and hair. The usual complement of eggs is from four to seven. I have seen this bird attacked by Brewer Sparrows, after the shrike had captured a fledgling sparrow, and do not doubt that in the breeding season at least, their food consists partly of small birds.

Vireosylva swainsoni. Western Warbling Vireo. A young male was taken August 3, 1914, on the Miller Ranch at the mouth of the Deschutes.

Lanivireo solitarius cassini. Cassin Vireo. Along the streams fringed with shrubbery and deciduous trees and on the lower mountain slopes and timbered areas this species is quite common.

Vermivora rubricapilla gutturalis. Calaveras Warbler. Recorded by Jewett from the mouth of the Deschutes River (CONDOR, XVIII, p. 22).

Vermivora celata lutescens. Lutescent Warbler. Most common of the migrating warblers in spring. Usually noted in the thickets along small streams.

Dendroica aestiva brewsteri. California Yellow Warbler. A common summer resident, frequenting brush thickets along streams in the open country.

Dendroica auduboni auduboni. Audubon Warbler. Noted as common in the timber east of Haycreek, on Warm Springs Reservation and on the Deschutes National Forest. During migration it is fairly common in the open country.

Dendroica nigrescens. Black-throated Gray Warbler. Jewett noted this species at Gateway on May 30, 1915.

Dendroica townsendi. Townsend Warbler. Not common. Noted on a hillside at Gateway and in groves of willows at Haycreek. Jewett observed several in the timber at Mill Creek, and on May 5, 1915, collected a male from the top of a tall pine tree.

Oporornis tolmei. MacGillivray Warbler. Noted at Haycreek and fairly common northeast of Warm Springs on Mill Creek. I also observed it in an opening in the timber on the north side of the Warm Springs Reservation.

Geothlypis trichas occidentalis. Western Yellowthroat. This rather shy and retiring species is common at the mouth of the Deschutes and on some of the smaller streams.

Icteria virens longicauda. Long-tailed Chat. Common along Warm Springs River and at The Dalles in June. Seen at the mouth of the Deschutes in August.

Wilsonia pusilla pileolata. Pileolated Warbler. In the middle of June a few were seen daily in the willows and other bushes along Haycreek.

Anthus rubescens. Pipit. A flock was seen by Jewett at the mouth of Willow Creek on April 2, 1915.

Cinclus mexicanus unicolor. Dipper. Common along the mountain streams of the

Cascade Mountains. One was seen by Jewett along the Deschutes at Maupin on April 25, 1915.

Oreoscoptes montanus. Sage Thrasher. Another characteristic species of the Upper Sonoran zone, found exclusively in the sage-brush areas, and generally common over its range.

Salpinctes obsoletus obsoletus. Rock Wren. An ever present bird in the canyons, rock slides and about the foot of cliffs, as well as around the rimrock outcroppings on the desert. Jewett found a nest containing young at the mouth of the Deschutes on April 14, 1915, and another containing six fresh eggs at Twickenham, in the John Day canyon, about June 20.

Catherpes mexicanus punctulatus. Dotted Canyon Wren. A specimen was taken by Jewett at the mouth of the Deschutes on July 30, 1914.

Troglodytes aedon parkmani. Western House Wren. A nest of this species was found in a hollow fence post near an old cabin on Foley Creek during May, 1915. Noted by Jewett at the mouth of the Deschutes in April.

Nannus hiemalis pacificus. Western Winter Wren. A bird was noted some miles from timber on Warm Springs River north of the Agency. Jewett caught one in a mouse trap at the Warm Springs Agency.

Telmatodytes palustris plesius. Western Marsh Wren. A common breeding bird in the tule areas of Paulina Marsh.

Certhia familiaris occidentalis. California Creeper. On May 2, 1915, at Mill Creek, I collected a Creeper that was working in a Douglas fir. No other creepers were seen, but they are probably fairly common on the Cascade slopes.

Sitta carolinensis aculeata. Slender-billed Nuthatch. Fairly common in the pine and fir forests of the lower Cascade slopes. On May 28, 1913, a nest containing five incubated eggs was found in a dead snag at the base of Lava Butte on the Deschutes Forest Reserve. The lining of this nest was of wadding taken from an old mattress that had been thrown beside the trail.

Sitta carolinensis nelsoni. Rocky Mountain Nuthatch. Noted at Foley Creek on a pine-covered spur of the Blue Mountains.

Sitta canadensis. Red-breasted Nuthatch. Taken at Mill Creek early in May. During August two or three were seen in a willow grove on the south shore of the Columbia River near the mouth of the Deschutes.

Sitta pygmaea. Pigmy Nuthatch. Noted on the Blue Mountain and Cascade slopes and the Deschutes Forest Reserve. On June 18, 1913, a nest containing young was found in the pine and fir timber near the north side of Warm Springs Reservation.

Penthestes articapillus septentrionalis. Long-tailed Chickadee. Seen in the willows at the mouth of the Deschutes and on Willow Creek; also along streams at Maupin and Warm Springs.

Penthestes gambeli gambeli. Mountain Chickadee. Common in the pine belts, and also noted in June on the juniper flats on the north side of the Paulina Mountains.

Regulus calendula calendula. Ruby-crowned Kinglet. In the spring this species was noted along the Columbia River and many of the smaller streams in the open country.

Hylocichla guttata guttata. Alaska Hermit Thrush. On April 30, 1915, this species was noted and specimens taken in a brushy cottonwood grove along a creek near Warm Springs.

Planesticus migratorius propinquus. Western Robin. Common and well distributed over a large part of this region.

Ixoreus naevius naevius. Varied Thrush. On August 6, 1914, I collected an example of this species in an orchard on the Miller Ranch at the mouth of the Deschutes River.

Sialia mexicana occidentalis. Western Bluebird. Fairly common in the open timber of the lower Cascade and Blue mountains. Nests were noted at Foley Creek in May.

Sialia currucooides. Mountain Bluebird. This species is common in the open country, nesting in junipers, banks of coulees, and around ranch buildings. Near Madras a pair was found nesting in a sheet-iron twine box on a binder. In the timber these birds are not as common as *S. m. occidentalis*.

Tillamook, Oregon, May 27, 1916.

FROM FIELD AND STUDY

The Bohemian Waxwing in Colorado.—The Bohemian Waxwing (*Bombycilla garrula*), though erratic in its movements, visits Colorado in numbers every winter; but not within the memory of the oldest settler has it heretofore appeared along the eastern foothills and the western edge of the great plains in such large flocks as in 1917. It has attracted the attention of thousands of people who never noticed the species before, and who supposed that it was something unknown.

The first word I had of the arrival of these birds in the state was from Mr. O. De Motte, who reported a flock of a thousand at Wall Street, in the mountains of Boulder County, about January 10, and smaller flocks from time to time until March 5. Telephone communications reported large flocks at Longmont on February 25, in the orchards. On March 2, during a heavy snowstorm, and for several days thereafter, my office and house telephones were kept busy by numerous reports from excited men, women and children in various parts of Boulder, telling of the thousands of queer birds gathered in the orchards, and asking what they were, whence and why they came, where and when they were going. I was especially pleased with the interest shown by the teachers in seeking accurate information concerning the birds and their habits, for the benefit of their pupils.

The birds fed upon the frozen apples, a feast prepared for them by an unexpected freeze early last autumn. I counted five hundred waxwings in one tree and estimated that there were at least 10,000 or 15,000 within a radius of half a mile from the county court house. The large flocks began to break up about March 12, perhaps because the larger food supplies were giving out; but individuals and smaller flocks were seen daily until March 28. No Cedar Waxwings were seen. Reports of waxwings in equal abundance in Denver began to appear in the Denver newspapers a few days after their appearance in Boulder. A similar visitation was reported in Grand River Valley, on the western slope, several years ago, and then, as on this occasion at Boulder and Longmont, frozen apples provided them with a banquet.—JUNIUS HENDERSON, *Boulder, Colorado, April 11, 1917.*

Another Instance of Lead Poisoning in Ducks.—During the winter of 1907-08, the writer learns from Mr. J. H. Bowles, of Tacoma, that Mallards (*Anas platyrhynchos*) suffered in considerable numbers from the effects of lead poisoning. So far as known this occurred only at the Nisqually Flats, located between Tacoma and Olympia, where the Nisqually River empties into Puget Sound. These flats have been shot over by duck hunters for the past forty years and have doubtless become fairly well charged with lead. So far as known only the Mallards were affected, but in this species as many as twenty-seven pellets were taken from a single stomach. No recurrence of this trouble has been reported until the present season of 1917, when on March 3, the writer collected an adult female of the Scaup Duck (*Marila maria*). This bird was found in the same vicinity as the others, and was unable to fly because of its greatly weakened condition. While skinning it no wounds were found, but an examination of the contents of the stomach revealed twelve duck shot and nothing else. In this instance, as in all the others, the walls of the stomach were eaten away, to a considerable extent, and the larger intestine had become slate blue in color. The ducks evidently mistake the shot for sand, or gravel, and eat them with their food. It is interesting to note that this is the only local record of the kind since 1907-08, although the ground has been thoroughly worked over by careful observers.—STANTON WARBURTON, JR., *Tacoma, Washington, March 8, 1917.*

Fork-tailed Petrel and Baird Sandpiper in Southern California.—The following good records of birds rare in southern California have resulted from the systematic beach work being carried on by the Museum of History, Science and Art.

Fork-tailed Petrel (*Oceanodroma furcata*). A total of nine birds found dead on the beach in the vicinity of the village of Sunset Beach, Orange County, in 1916, as follows: One each on May 15 and 22, three on May 25, and four on June 1. Two of these were fresh enough to save as skins, while skeletons were made of several others. All were found in a distance of less than a mile, six within forty feet, and four in a space hardly eight feet square. In the last case the proximity of the birds suggests that they died on the beach.

Baird Sandpiper (*Pisobia bairdi*). Five seen, of which three were taken, near Del Rey, Los Angeles County, August 17, 1916. Aside from the Catalina Island record, this appears to be the only one for the coast between San Diego and Santa Barbara. If collectors generally would give the beach its share of their attention, possibly this bird, and other species as well, would prove less rare than published records indicate.—L. E. WYMAN, *Mus. Hist. Science and Art, Los Angeles*, April 8, 1917.

Nesting of the Harris Hawk in Southeastern California.—In the first half of March, 1917, a pair of Harris Hawks (*Parabuteo unicinctus harrisi*) were noticed almost every day, but during the last half of the month they were not around so much or not in sight so often. I had looked in all the tall trees in this vicinity but had not found a nest that looked like a hawk's nest, so thought they were nesting some place else.

On April 4 Dr. Loyal H. Miller was here to visit the valley and on the 5th we two were going down the lagoon near a garden I have about a quarter of a mile from the store, when I thought of a large nest I had found in the winter in a bunch of mistletoe. This proved to belong to the Harris Hawks. On climbing up to it we found three eggs. Two of the eggs were unmarked and of a grayish color or more of a soiled white, while the other had a few pale brown splotches on the larger end. They looked like they were about to hatch when we found them.

The nest is in a thicket of mesquite with arrowweed underbrush, near a slough that has water in it most of the time. Near the nest is a large thicket of tall willows, and the slough is full of dead trees, cat-tails and tules. One of the tallest of the willows is used more or less as a look-out for the old birds. Although the nest is very close to the houses I have never seen the birds on this side of the lagoon. They do not make very much noise after the nest is established unless something is near the nest.

I visited the nest every two or three days to find out when the eggs hatched. On the morning of the 27th of April one of the birds was out and by night the other two had left their shells. They are of a light buff color.—LEO WILEY, *Palo Verde, California*, May 2, 1917.

Notes from the Fresno District.—To the list of 194 birds of the Fresno district published by Mr. Tyler I wish to add four names. On November 3, 1910, Mr. Joseph Sloane secured at Raisin, and sent to me, a Nevada Sage Sparrow (*Amphispiza nevadensis nevadensis*). This was not reported before owing to a mistake in identification.

March 18, 1916, Alaska Myrtle Warbler (*Dendroica coronata hooveri*); May 15, 1916, Calliope Hummingbird (*Stellula calliope*); October 2, 1916, Russet-backed Thrush (*Hylocichla ustulata ustulata*): these three birds were picked up dead in the city of Fresno.—WINIFRED N. WEAR, *Fresno, California*, June 10, 1917.

Another Record of the European Widgeon from the State of Washington.—Reports of a more or less reliable nature concerning the capture of *Mareca penelope* in this state are not infrequent, but there are so few actual specimens for comparison and study that such new ones as come to hand would seem to be worthy of recording. The most recent to my knowledge is a handsome male taken by myself on March 31, 1917, on the Nisqually Flats, Thurston County, Washington. It was in the company of about fifty Baldpates (*Mareca americana*) that were feeding on the ranch owned by Mr. William Goodburn, who very kindly gave his permission to collect on his property. No other birds of this species were seen, nor have any others been recorded from the state this season as far as known to me.—STANTON WARBURTON, JR., *Tacoma, Washington*, April 4, 1917.

Notes on the Black-crowned Night Heron near Denver.—While out motoring on May 13, I stopped to investigate a familiar ash "tree claim", or grove, about fifteen miles from Denver, a favorite breeding place for magpies, and was surprised to find a rookery of perhaps fifty nests of the Black-crowned Night Heron (*Nycticorax nycticorax naevius*) in all stages of construction. Noticing one of the birds leave the top of a magpie's nest I made investigation and found three of the herons' eggs on top while inside of the nest were seven fresh magpie eggs; on the ground and in some of the herons' nests was ample evidence of the magpies' depredations. From another tree not over fifty feet distant from this one I flushed a Long-eared Owl (*Asio wilsonianus*) from an

old magpie's nest, in the mud cup of which, without any apparent housecleaning or repairs (the canopy or top being gone), she had deposited five eggs. These nests were about twenty feet from the ground. —W. C. BRADBURY, *Denver, Colorado, May 17, 1917.*

Some April Nesting Notes from the Vicinity of Buena Vista Lake, Kern County, California.—A party composed of Mr. and Mrs. O. W. Howard, Mr. H. Sandberg and the writer spent most of April 1 and the forenoon of April 2 in the brushy country bordering Buena Vista Lake. Our time was occupied in search of nests of the various land birds of the locality, the particular objectives being the nests of Sage and Leconte thrashers. On April 1 the first find was a partially constructed nest of the Sage Thrasher (*Oreoscopus montanus*), one of the birds being shot after it left the nest. Another nest in about the same stage of construction was found a short time later. At this nest both birds were present. In this same vicinity was found a nest of the Leconte Thrasher (*Toxostoma lecontei*) containing two newly hatched young and one addled egg. The female was flushed from the nest and the male was observed singing from the top of a bush nearby.

The afternoon of April 1 was spent in the vicinity of the Maricopa oil fields, near the west end of the lake. Here Mrs. Howard made the first find, a nest of the Leconte Thrasher containing four eggs about half incubated. During the remainder of the afternoon five other nests of this thrasher were found, as follows. By O. W. Howard, two nests containing three and four slightly incubated eggs, respectively; by Mr. Sandberg, one nest containing three young, and by the writer, two nests, one of which contained three nearly grown young and the other two newly hatched young and one addled egg. All these nests were located in atriplex bushes. In the same locality four nests of the Bell Sparrow were noted. Three of these contained slightly incubated eggs and the fourth newly hatched young. Camp was made for the night by the lake shore.

On the morning of April 2 the only thing of interest noted was a Roadrunner's nest lined with burlap. This nest contained seven slightly incubated eggs. Other nests noted were California Shrike with five eggs and Western Crow with four. Tree Swallows were abundant and were nest building generally in the willow timber.—G. WILLETT, *Forrester Id., Alaska.*

Cases of Early Nesting in the State of Washington.—In spite of the exceedingly cold, wet spring of the present year, 1917, it is rather surprising to note that several species of birds were, if anything, rather earlier than usual in nest building. Together with Mr. J. H. Bowles, of Tacoma, a trip was made on April 17, to a locality about twenty miles south of this city that is noted for its abundance of bird life.

On nearing the particular spot for which we were bound a pair of Killdeer (*Oxyechus vociferus*) came to notice that seemed to be in great distress at our approach. Close examination showed a baby chick about a week old. At a distance of about thirty yards he looked a miniature adult Killdeer, perfect in every respect even to the ring around the neck. A closer view, however, showed it had only the upper ring. Another interesting feature was its very long legs, looking greatly out of proportion to its small size, which were doubled up along the body as it crouched upon the ground.

Nearing a small lake that was hidden in a mixed growth of oak and Douglas fir we located a nest of the California Creeper (*Certhia familiaris occidentalis*) that seemed ready for eggs. This later contained seven eggs, a record in point of numbers for this vicinity, if not for its entire range.

On the other side of this lake a slightly incubated set of three eggs of the Kennicott Screech Owl (*Otus asio kennicotti*) was found in a natural cavity five feet up in a cottonwood tree. This makes the fourth set of eggs taken from this same pair of birds in the past three years. The hole from which this set was taken was found to contain three eggs two years ago, the second set for that year being found about two hundred yards distant from the first. Last year a set of three was taken from the hole last mentioned, while this year, as already stated, a set of three was taken from nest number one.

While skirting the lake and the dense willow swamp at its head, two female Mallards (*Anas platyrhynchos*) were seen, each with a brood of ducklings about a week old. When we consider that it requires a month for ducks' eggs to hatch, the first two weeks in March proves an early date for these birds to lay their eggs. As we were watching the second lot of young Mallards being taken out on dry ground for a sun-bath, a Hooded Merganser (*Lophodytes cucullatus*) was flushed from her nest. This was found to contain ten eggs, in which incubation was about two-thirds advanced.

Next, an Audubon Warbler (*Dendroica auduboni*) of the female sex was seen gathering material for her nest. When a sufficient load was obtained she flew high up into a giant fir, where we lost sight of her at a height of about one hundred and fifty feet as she was still going upward.—STANTON WARBURTON, JR., *Tacoma, Washington, May 15, 1917.*

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EDITORIAL NOTES

Messrs. Chambers and Law have filed with the two Divisions of the Cooper Club their report of the organization's finances for the year 1916. This report shows a remarkably healthy state of affairs when one considers the rather perplexing conditions under which publishers have had to labor the past year or so. To our Business Managers is due the Club's heartfelt thanks for the intelligent attention they have devoted to its affairs. The following are some of the outstanding features of the report. The total receipts for the year amounted to \$2143.39, derived as follows: Dues, \$1281.35; subscriptions to Condor, \$223.45; advertising, \$4.00; sale of back Condors, \$71.59; sale of Avifaunas, \$338.00; life memberships, \$225.00. Expenditures involved \$1991.61, covering the following items: Printing Condor, \$1167.56; half-tone cuts and other illustrations, \$124.65; separates, \$8.21; Editorial expense, \$22.94; Managerial expense, \$149.05; Division expenses, \$59.20; balance on Avifauna xi, \$460.00. In bank on January 1, 1916, \$88.08; on January 1, 1917,

\$239.86. Against this latter fund, however, should be debited advance dues and subscriptions received on 1917 account; indeed, an actual deficit is figured for 1916, of \$142.25. Nevertheless the outlook for 1917 is not discouraging, in spite of the world events which are bound to have a depressing effect on every enterprise for the production of other than the basic necessities of life and war. It is quite likely that a reduction in the size of THE CONDOR for 1918 will be necessary. It is planned to establish a reserve this year to cover possible decrease in income in 1918. Ornithological periodicals the world over have already shown more or less reduction in size; some of them have suspended altogether. We have been until now the most fortunate, and prospects with us are still far from serious.

The Cooper Club suffered the loss of a useful and widely known member in the death of Norman DeWitt Betts who, on May 21, 1917, was instantly killed by lightning at his cattle ranch in northeastern Utah. Graduated from Cornell University as a mechanical engineer, and employed for several years in the United States Forest Service, Betts's work had taken him into the field in several states of the middle west. At the time of his death he was thirty-seven years of age and was therefore at a period which promised much for ornithology, for he had become practiced as a field observer and had begun to record notes of much general interest on the bird-life in the little known region of his new home. His first publications were in *The Auk* and *Bird-Lore* and were written from St. Louis in 1909 and 1910. Later, notes in the same magazines were contributed from Boulder and from Madison. In THE CONDOR of July, 1916, appeared an account written by Betts relative to the birds encountered during his trip to Montana in the summer of 1915. Of greatest interest, however, is his list of the birds of Boulder County, Colorado, a paper of fifty-five pages published by the University of Colorado as Number Four of Volume Ten of their "Studies".—O. WIDMANN.

PUBLICATIONS REVIEWED

How to MAKE FRIENDS WITH BIRDS | What to do to make one's home grounds attractive to | bird life. From nesting boxes to winter feeding | By NIEL MORROW LADD | President of the Greenwich Bird Protective Society. | Member of the Linnaean Society | [design] | More than 200 illustrations | Garden City New York | Doubleday, Page & Company | 1916. Pp. 8+228, illus., as above, some colored.

In an attractive little $3\frac{1}{2}$ by 6 inch booklet entitled "How to Make Friends With Birds" Mr. Ladd tells of the various methods which are in current use for attracting and helping to increase the number of birds about our homes. The principal field of application of the book is eastern North America, but persons living on the Pacific Coast will find much of use to them as well.

The author gives specific information for making many different styles of bird houses in sizes adapted to the needs of different species of birds, and also tells how and where they should be put up in order to get the best results. The use of tin cans, gourds, and nest shelves is discussed, and some pages are devoted to the matter of bird baths. Next, the problem of important bird enemies receives attention, and specific instructions are given for dealing with the domestic cat and English Sparrow, including plans for constructing cat and sparrow traps. Then comes the matter of food plants useful to attract birds and protect cultivated crops, and the kinds of "table" food to be offered different species during the winter months and the methods to be employed in placing it. Means of extending the protection afforded birds, a brief mention of the possibilities in artificial propagation, the relation of certain birds to important insect pests, and the methods to be used in organizing clubs for bird protection form the final chapters. A "brief bibliography" completes the book.

The book as a whole is cleverly conceived and executed; only the references at the end are a disappointment. The reader may search in vain to discover whether A. K. Fisher's "Hawks and Owls of the United States" is a government publication, and will have no clue to the fact that the work is an economic treatise.—TRACY I. STOREY.

RECENT PUBLICATIONS BY EDWARD HOWE FORBUSH.—Three very interesting papers have come to us from the pen of Mr. Edward Howe Forbush, State Ornithologist of Massachusetts, during the year which has just passed. Two of these have a direct appeal to ornithologists, namely those on the cat and the natural enemies of birds, while the third shows something of the work and the possibilities in a public office devoted to the interests of birds.

"Bird Killer, Mouser and Destroyer of Wild Life" are the words which Mr. Forbush uses to characterize the domestic cat, and no one with an open mind who reads his pamphlet on the subject can fail to be

convinced of the truth of this description. After giving in some detail the history of the cat, the author dwells on the habits of the animal, and compares her with man's other household companion, the dog. Then he goes on to speak of the numbers of cats and of their food habits in considerable detail, of their destruction of various kinds of birds and mammals, both wild and domesticated, of the economic value of the animals killed by cats, and of the cat as a disseminator of disease. Finally he mentions the various means which have been tried for controlling cats, and of the success or failure of these methods. Altogether the pamphlet is an admirable summing up of the case of the cat, pro and con, and even the most ardent cat enthusiast cannot fail to be convinced of the evidence against the animal. A copy of the paper should be in the hands of every bird student.

In his paper on The Natural Enemies of Birds² Mr. Forbush begins by stating in a succinct manner the general relations which exist between birds and their natural enemies, particularly of the regulative function which the latter exercise. The elimination of the unfit and the control of total numbers are both useful works of these "enemies". Then he discusses the effect of man's "satellites", the introduced domestic animals, and following these the feral, wild, or natural, enemies. Finally he calls attention to some of the attempts which have been made to "control" these natural enemies, by bounties and other means, and in conclusion lays down certain general principles which need to be observed in dealing with the matter of control.

In Mr. Forbush's ninth annual report³ one gets a very good idea of the multifarious tasks and duties which a State Ornithologist is called upon to perform in the course of a single year. Preparation of five papers for publication, revision of his book on the game birds of the state, giving numerous lectures and attending to a considerable correspondence comprise the general activities of his

²The Domestic Cat. By Edward Howe Forbush. Massachusetts State Board of Agriculture, Economic Biology—Bulletin no. 2, 112 pp., frontispiece, 20 pls., many figs. in text. 1916.

³The Natural Enemies of Birds. By Edward Howe Forbush. Massachusetts State Board of Agriculture, Economic Biology—Bulletin 3, 58 pp., 7 pls., 5 figs. in text. 1916.

⁴Ninth Annual Report of the State Ornithologist [of Massachusetts]. By Edward Howe Forbush. Boston, Mass. 26 pp., frontispiece, 6 pls. 1917.

office during 1916. The need of more assistance in the performance of his duties is keenly felt and an appeal for additional trained help is made. It is to be hoped that the Commonwealth which Mr. Forbush has so faithfully served for these many years will see fit to give him the necessary increase in his staff, so that in the future he may carry on in increased measure the work of education which he has done so well in the past.—TRACY I. STORER.

A LIST OF AVIAN SPECIES FOR WHICH THE TYPE LOCALITY IS SOUTH CAROLINA. By ARTHUR TREZEVANT WAYNE. (—Contributions from the Charleston Museum, III, Charleston, South Carolina, 1917 (our copy received April 25), pp. 1-61, 1-8.

No less than seventy-six names are here catalogued of species of birds first discovered in South Carolina, affording good basis for the author's claim of his state's pre-eminence in this regard. Fifty-seven names are founded upon descriptions in Catesby's *Natural History of Carolina, Florida, and the Bahama Islands* (1731—1748), seven are discoveries of Audubon's, and the rest are divided among several other authors.

Manner of treatment is as follows: First the current name of the species as it appears in the A. O. U. *Check-List*, Latin and English, with the authority; this is followed by the citation of the original account. Catesby's long, descriptive names are given in full, but not those applied by Linnaeus to Catesby's species. Similarly, with other authors, while the descriptions are cited, there are no entries of the names used by the describers.

Such papers as this are, of course, of great value in many ways, and of intense interest from the historical side. South Carolina offers a peculiarly rich field in the latter regard, with Catesby's early work in the region, and Audubon and Bachman in later years. The extent of their activities within the state are outlined in the introduction, but too briefly to be satisfactory. It is to be regretted that the author did not go more into detail in this regard, for his conclusions in many instances differ from those of previously accepted authorities, and a fuller account might be explanatory of his reasons. For many of the species which he ascribes unequivocally to South Carolina, the A. O. U. *Check-List* gives type localities as possibly Carolina, but with an alternative of some other region, there having evidently been doubt in the matter; in some few cases there is flat disagreement between the *Check-List*

and Mr. Wayne. In all these instances it would have added much to the value of the paper to have given the steps by which the author's conclusions were reached.

"More birds have been made known to science from South Carolina than from any other state except California. Indeed, of valid species South Carolina has nearly twice as many as California, the great majority credited to the latter state being merely subspecies." Without wishing in any way to dim the glory of South Carolina's claim, we cannot help commenting upon the curious implication as regards the relative "importance" of species and subspecies.

Typographically the paper is excellent, showing in every detail the results of skilled and careful editorial work.—H. S. SWARTH.

PETS | THEIR HISTORY AND CARE | by LEE S. CRANDALL | | with illustrations from life | [Vignette] | New York | Henry Holt and Company; 372 pp., illustrated. Price \$2.00. Our copy received May 8, 1917.

The book here reviewed is dedicated by the author "To my parents who endured much from a pet-loving son." All parents of pet-loving sons should find solace in the carefully written pages in this book. Mr. Crandall, the author, is assistant curator of birds in the New York Zoological Park and every one who has seen the many healthy and contented birds living under his charge will accept his recommendations as authoritative.

The book is divided into four sections, the first dealing with the care of the domesticated mammals which are usually kept as pets, with descriptions of the different breeds, and with suggestions for the care of such small wild animals as are apt to find their way into the custody of the small boy. The second section includes the birds. Their general care is considered, foods, diseases, and types of cages or aviaries. Brief descriptions are given of the many foreign and native song birds which are most frequently kept as pets, as well as the domesticated pigeons, parrots and bantams.

Snakes, lizards, alligators, turtles, frogs and toads are so kindly dealt with in the third section that one almost believes that the youngster who yearns for their companionship shows much better judgment than does the adult who spurns them.

The last section is devoted to the care and maintenance of the home aquarium; and a list of desirable tenants is given, to

gether with an account of their varying needs and habits.

The appendix contains a chapter on theories of breeding and a list of reference works. The list will undoubtedly prove useful, but the chapter on the theories of breeding is a disappointment. It is an endeavor to explain in a few short pages the theories of Mendel, Darwin, De Vries, Galton, and Davenport, and it leaves the reader with a conviction of his own utter confusion, and a suspicion that the author, too, was confused.

The book is well illustrated with nearly a hundred reproductions from photographs.

There is among those who come in contact with children a growing belief that in fostering and developing a child's fondness for pets we foster and develop highly desirable character traits in the child himself, and, as Mr. Crandall suggests in the preface to his book, "many of the problems which perplex the adolescent adjust themselves normally by constant contact with reproductive life."

Mr. Crandall's book is the best and most complete work which we have seen in the field treated, and we suggest that every pet-loving son procure a copy for his parents.—H. W. GRINNELL.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

MARCH.—The regular meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology on March 15 at eight o'clock. Dr. Evermann called the meeting to order with the following members in attendance: Messrs. Benton, Carriger, Evermann, Grinnell, Hanford, La Jeunesse, Squires, Storer, Wright; Mesdames Allen, Culver, Ferguson, Field, Grinnell, Head, Meade, Newhall, Witter. Visitors: Messrs. Austin, Wm. Hall, Meade; Mesdames Evermann, Boyle, Stone, Straight.

The minutes of the February meeting were read and corrected, and the minutes of the February meeting of the Southern Division were read. Mrs. E. G. Witter, whose name was proposed at the January meeting, and the eleven names passed on for approval from the December and January minutes of the Southern Division, were elected to membership.

The name of J. Harold Evans of Santa Rosa was proposed by H. W. Carriger, and that of Paul J. Hartmann, 1118½ Maple

Ave., Los Angeles, by W. Lee Chambers from the Southern Division.

The resignation of Miss Alice F. Crane was accepted.

A very interesting account of the Birds of San Francisco County was given by Rev. W. A. Squires. The discussion of conditions in Golden Gate Park led to a motion by Dr. Grinnell that a committee be appointed to act in conjunction with the Audubon Association of the Pacific with reference to the attempted extermination of supposedly injurious species in Golden Gate Park. The President appointed on this committee were Messrs. Squires, Carriger and Lastreto. Adjourned.—AMELIA S. ALLEN, *Secretary*.

APRIL.—The regular meeting of the Cooper Ornithological Club (Northern Division) was held at the Museum of Vertebrate Zoology, April 19, 1917. There were present: Messrs. Bryant, Evermann, Palmer, Storer, Swarth, Wright; Mesdames Allen, Bryant, Culver, Ferguson, Grinnell, and Knapen. Messrs. Allen and Linforth, Miss Straight and Mrs. Swarth were visitors.

The minutes of the March meeting were read and approved, followed by the minutes of the March meeting of the Southern Division and of the January and February meetings of the Intermountain Chapter. Mr. J. Harold Evans was elected to membership; also Mr. Paul J. Hartmann, whose name was received from the Southern Division.

The following names were proposed for membership: Mrs. Bessie W. Kibbe, 1534 Grove St., Berkeley, by Mr. Swarth; Mrs. Edwin T. Blake, 2233 Piedmont Ave., Berkeley, and Mrs. Arthur Hubbard Cole, 2827 Hillegass Ave., Berkeley, by Mrs. J. T. Allen; also the five names presented at the March meeting of the Southern Division.

Mr. Storer reported to the Club the substance of an inquiry from Mr. E. W. Nelson, Chief of the Biological Survey, with regard to the destruction of water-birds by crude oil floating on the surface of the Pacific Ocean. Pres. Lastreto of the Audubon Association of the Pacific reported that he had been in correspondence with the Inspector of the 18th Lighthouse District, who wrote that unless the discharge of oil in the neighborhood of the Farallones could be prevented, the colonies of nesting birds on those islands would soon be destroyed. Other investigations as to the custom of discharging oil were reported. Dr. Bryant moved the appointment by the Chair of a committee to investigate the question and report at the next meeting. Carried.

On motion of Mr. Swarth, seconded by Mr. Storer, the election of Mr. E. W. Nelson to Honorary membership in the Club was unanimously approved by the Northern Division.

A letter from Dr. A. K. Fisher announcing the celebration of the seventieth birthday of Mr. John H. Sage on April 20 led to a motion which was unanimously carried that a congratulatory telegram be sent by the Northern Division. Messrs. Swarth and Storer were appointed a committee to carry out the Club's wishes.

Mr. Storer reported that House Bill 2612, an enabling act to carry out the Canadian Treaty for protecting migratory birds, was up for consideration, and personal letters to representatives were urged.

Business of the evening having been disposed of, the Club listened with pleasure to a paper by Professor James T. Allen on "Birds in Ancient Greek Literature and Art." Much interest was shown in the ancient history of ornithology in the apt descriptions quoted from Homer, Hesiod, Aristophanes and Aristotle.

Dr. T. S. Palmer then made a plea for broader historical study in connection with ornithology, particularly in the study of the ornithology of California. An exact knowledge of the lives of early collectors in the state would solve many questions of locality and nomenclature.

Before adjournment, the President appointed Messrs. Bryant and Wright as the committee to investigate the question of crude oil and the destruction of bird-life. Adjourned.—AMELIA S. ALLEN, *Secretary*.

MAY.—The May meeting of the Northern Division of the Cooper Ornithological Club was held at the home of the Secretary at 3:30 p. m., May 13, 1917. Dr. Evermann called the meeting to order with the following members and friends in attendance: Messrs. Carriger, Davis, Evermann, Grinnell, Hansen, Holman, Lastreto, Morley, Smith, Steinmetz, Swarth, Wright; Mesdames Allen, Culver, Ferguson, Grinnell, Gunn, Kelley, Kluegel, Knappen, Lombardi, Schlessinger, Swezey. The visitors were: Mr. Allen, Mrs. Essenberg, Mr. and Mrs. Kibbe, Mrs. Morley, Mrs. Smith, Mr. and Mrs. Smythe, Miss Straight, Mrs. Swarth, Master George Swarth and Miss Kelley.

After the reading of the April minutes of the Northern Division and voting their approval, the April applicants, Mrs. Edwin T. Blake, Mrs. A. H. Cole, Mrs. Bessie W. Kibbe, and five others whose names were

proposed at the March meeting of the Southern Division were elected to membership.

Mr. Lastreto reported for the committee appointed to investigate the killing of supposedly obnoxious birds in Golden Gate Park. The committee had agreed to report as really destructive the Cooper and the Sharp-shinned Hawks, but to ask that the Kingfishers, Owls and Red-tailed Hawks be protected. Correspondence with the police having proved unsatisfactory, the committee had written to Mr. John McLaren, Superintendent of the Park. In the absence of Dr. Bryant, Mr. Lastreto reported the activity of the joint committee of the Cooper Club and the Audubon Association of the Pacific with regard to the control of crude oil on the Pacific.

Dr. Grinnell then gave a talk on "The Birds of Death Valley", presenting many interesting problems of migration and adaptation. After adjournment members of the Club went for a walk in Strawberry Canyon.

—AMELIA S. ALLEN, *Secretary*.

SOUTHERN DIVISION

APRIL.—Regular monthly meeting of the Southern Division was held at the Museum of History, Science and Art, April 27, 1917. President Miller officiated, with other members in attendance as follows: Appleton, Brown, Bishop, Daggett, Holland, Little, Nokes, Wyman and Shepardson. Mr. Hannaford was a visitor.

Minutes of the March meeting were read and approved, followed by reading of minutes of the other Divisions. On motion of Dr. Nokes, seconded by Mr. Brown, the applicants whose names were presented at the March meeting, were elected. New names were presented as follows: Dr. William Henry Bergtold, 1159 Race St., Denver, Colo.; Henry O. Havemeyer, 129 Front St., New York City; Frank Charles Hennessey, 457 Albert St., Ottawa, Ontario, Canada; Charles F. Jenney, 100 Gordon Ave., Hyde Park, Mass.; Harold L. Madison, Curator Park Museum, Providence, R. I.; and Joseph Welsh, Pasadena Hardware Co., Pasadena, Calif.; all presented by W. Lee Chambers; A. W. Hannaford, R. R. 9, Box 700, Los Angeles, by D. I. Shepardson; Harry V. Johnson, R. R. 1, Escondido, Calif., by A. M. Ingerson; Mrs. Eugene W. Leach, 736 Wisconsin St., Racine, Wis., by Wright M. Pierce.

There being no other business matters for consideration, the members informally discussed bird matters and inspected a series of skins of the duck family. Adjourned.—L. E. WYMAN, *Secretary*.





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